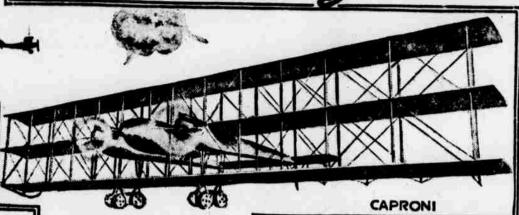


SEW AIRPLANES DEVELOPED 69 WAR



ugo, but the demands of war have stimulated the evolution of nircraft so intensively that in the last few months at least three different species of airplanes have been developed, and these are as distinct from each other as condors. pigeons and swallows. The monoplane has gone the way of the high-wheeled bicycle; it is

HEY were just airplanes two years

seen no more in the air. And instead of just airplanes, we have bombing machines, reconnaissance machines and battleplanes, each a specialized type designed for a specific duty. Then, in a class by themselves, there are the hydroplanes, writes Arthur Bening-

ton in the New York World. Bombing machines are the heavy artillery, the condors, the Percherons, the bulldogs of the air. Reconnaissance machines are the intelligence service, the carrier pigeons, the hunters, the pointers, of the air.

Battleplanes, which combine the duties of light cavalry and machine-gun squads, are the swallows, the thoroughbreds, the terriers, the wasps, of the air.

"You might as well ask me what kind of horse I consider the finest," replied an Italian aviator when asked for his opinion on the finest airplane. "It all depends upon what service you want your plane for. For dropping bombs on cities there is nothing like our own Caproni; the finest climbers I personally have encountered were German machines; the swiftest flyer up to date is the Italian S. V. A.; and I think the Austrians have the most reliable hydroplanes."

Of course this was merely the aviator's personal opinion, and it is given here not at all because of its value as a judgment on the several makes of machines, but merely to illustrate the diversity of type and the wisdom of not confusing the different types in one's mind.

For a bombing machine the primary requirement is ability to carry a heavy load. Then, in order of importance, come: Medium speed (80 to 100 miles an hour); climbing power (13,000 feet); defensive armament and a radius of action from 60 to 100 miles. Load-carrying power involves strength of construction, great stability, and engines that shall develop tremendous power and yet be as light as possible. Types of the bombing machine are the Italian Caproni, the British, Handley-Palmer, and the German Gotha G III and Friederichshafen G. H.

The reconnaissance machine must have room for at least two persons-the pilot and the observer; installation for wireless apparatus and cameras for taking both still and moving pictures;" fuel capacity sufficient for three or four hours of flight; fairly high speed-say from 115 to 120 miles an hour-and ability to carry a machine gun with which to defend itself if attacked. The camera installation makes great stability necessary. Types of this machine are the Italian Pomilio S. V. A, and Savola-Pomilio; the French Voisin, and the German Brandenburg, Albatross C III and Aviatiks C III.

Speed and climbing power battleplane. The latest types of this sort-the Italian S. V. A. and a new model of Pomilio; the French Nieuport and Spad, and the German Albatross D I and Albatross Bue-can carry only one man, who acts as pilot, observer and gunner. Most of them have only one gun, which is not mounted on a swivel, but is an integral part of the engine itself, for, as it discharges its bullets between the blades of a propeller revolving so rapidly that it cannot be seen, it must be perfectly synchronized with the motor, otherwise a bullet might strike a blade of the propeller. These machines are nothing but flying cannon. They carry no passenger, no cameras, no bombs, nothing except a single operator and the ammunition

The difference between reconnaissance and battieplanes appear slight when set down in figures, but then every fraction of an inch affects the speed and stability of an airplane.

Some idea of the differences may be obtained from the dimensions, and these can be given only approximately except in one or two cases. It is, of course, impossible to describe our own American planes, so the comparisons that follow are based on foreign machines.

One of the smallest of the battleplanes is a new Pomilio which has not yet been tested in America. American representatives of the Ansaldo company of Genoa, which makes the S. V. A .another very small one-decline to make its dimensions public at present, but Capt. Alessandro Pomilio, designer of the machines that bear his name, has no objection to it being stated that the Pomilio which flew from Fortress Monroe to Mineola and which soured over New York on Liberty Loan day, has a wing spread of approximately 38 feet. This, however, is a reconnaissance machine. The one that is coming is a battleplane and its wings have a spread of only a fraction over 30 feet. Both these Pomilio machines have exactly the same motor, a 200-horse-power Isetta-Fraschint, but the greater size of the one already here enables it to carry a passenger and cameras, while the smaller one can carry only one man, The reconnaissance Pomilio makes 120 miles an hour; a scout is said to have made on tests in

Italy 160 miles on hour. So far as official tests are known, the S. V. A. holds the record for speed. This is the machine that made the sensational flight from Turin to Rome, 396 miles, in two hours and fifty minutes, averaging 130.8 miles an hour. The French Nieuport machines are unofficially reported to have

made as high as 175 miles an hour. The dimensions of the German Albatross D I are known exactly, having been published by the French military authorities after measurement of captured machines. Its wings have a spread of 20.7 feet; its fuseinge is 23.6 feet long; its speed is 124 miles an hour and it can climb to 18,150 feet. It carries two rapid-fire guns, discharging through



the propeller, and 100 cartridges for each gun. Returning now to the bombing machines, types best known are the German Gotha, which is virtually a copy of the British Handley-Palmer. and the Italian Caproni. The dimensions of the latter cannot be given, for the machines are in sizes, the smaller being biplanes, the largest being a triplane. Those of the Gotha G III are known. It is a biplane with a wing spread of 77.7 feet, and fuselage 40.38 feet long; it can go 96.8 miles an hour, ascend 14,850 feet and carry a load of 1,320 pounds of bombs besides at least two

It was necessary to put three planes on the larger Caproni, in order to carry the immense weight at high speed. It has three fuselages, each with its own motor, the one in the middle being much shorter than the others. The right and left fuselages have propellers in front, the middle fuselage has a propeller behind. The motors are 240-horse-power Isotta-Fraschini.

The Caproni are slow machines-only about 90 miles an hour-and is capable of fighting singlehanded against the little wasps of the air. They are unique in that any one of their motors suffices to propel the muchine; therefore, all three must be stopped by bullets before it is disabled. In this last respect its only rival is-so far as known at present writing-the great German Gotha, which has two motors, either of which will propel It.

One of the most striking facts about the evolution of air craft since the war began is that the monoplane has virtually disappeared. Quite early in the war the French Nicuport grew an extra pair of wings. The principal renson why two pairs are better than one is that lifting power in the air depends upon the area of the wings. Now the Gotha's two pairs of wings are 77.7 feet long and 7.326 feet wide, which gives an area of 569 square feet for each pair, or 1,138 sounce feet as the total wing surface. If this were all in a single plane, the wing would have to be about 153 feet long if they had the same breadth as now; and the leverage of the wind on their ends would be so great that the machine would be absolutely unmanageable.

For this same reason the biggest of the Caproni, which is by far the largest thing in the air, has three planes instead of two.

The Gotha is, however, more than a bombing machine; it is a veritable nerial battleship. Over its bow on a swivel is a machine gun that can shoot forward over a horizontal arc of more than 180 degrees, and over a perpendicular are of about 240 degrees. On its fuseiage, behind its wings and behind the propellers, is another gun that shoots astern over a horizontal arc of nearly 180 degrees and over a perpendicular arc of about 190. Besides these two guns the Gotha has a third, mounted on a pivot in the body of the fuseiage and pointing downwards, through a port hole

in the bottom of the fuselage. By means of this last gun it can defend itself from enemy machines attacking it from below and behind, a position in which all other machines but the Gotha are vulnerable.

The Germans have been most ingentous in designing their airplanes for maximum effectiveness of gun fire. Their single-seated Albatross D. I and D HI, Fokker D. Halberstadt Roland D, and Ago D have two fixed guns firing ahead through the revolving propeller, and these machines are able to carry 2,000 cartridges for each gun. Their two-place recommissance machines Albatross, Rumpler, Avintik and L. V. G. have one fixed forward gun firing through the propeller and a second lighter gun on a swivel mounted behind the planes and firing to the rear over an angle of 180 degrees. The French have adopted this system for the airplanes of similar type.

The most ingenious armament, however, is that of the new Pomilio scout plane. It is not advisable to betray the secret of this plane at present but it is permissible to say that the single pilot controls five guns, all shooting ahead simultaneously, and that four of these are so perfectly concealed that even a photograph does not show where they are situated. It is in reality a fivebarreled Gatling gun on wings. This machine is now on its way to America, if indeed it has not already arrived.

Talking with the Italian aviators now here about motors, I found them deeply interested in the new Liberty motor, but none would venture to express an opinion about it.

"I could not judge of its value," said one of them, "until I had taken it up 5,000 or 100,000 feet in the air and watched how it behaved there. The Fint company, which has been making mo-tors ever since these were first invented, needed two whole years of experimentation before it was able to turn out a satisfactory airplane motor. Several times it thought it had it; several times it offered a motor that performed perfectly under the most exacting laboratory tests, but each time it failed when tested in the rarefied air of 10,000 feet above the earth. After two years of trial the Fiat people produced the wonderful motors now so extensively used. The Isotta-Fraschini company had a similar experience. We all ad-mire the perfection of mechanism of the Liberty motor and we all hope that actual flight will prove it to be as perfect as it looks, but no one of us would venture to give a verdict on it until

he had flown with it at all possible altitudes." These men, all of whom are youths who have had thrilling experiences in actual warfare, are fond of discussing the probabilities of a flight across the Atlantic. Any one of them would be willing to attempt it, but they disagree as to the machine most likely to be the first to make it. Some say the giant Caproni, which would need at least 24 hours, and probably 40, to fly from Newfoundland to Ireland (the shortest route), while others say some such machine as the S. V. A., as it could make the flight easily between sunrise and sunset. In the one case it would be like a giant condor relying on the power of its wings to sustain it a day and a night in flight, in the other case it would be a sea gull or a swallow relying on terrific speed to carry it over by daylight.

NAMING OF WARSHIPS.

The law requires that all first-class buttleships "shall be named for states and shall not be named for any city, place, or person until the names of the states have been exhausted," and a recent article by Walter Scott Meriwether In the Rudder points out that Secretary Daniels' recent order assigning the names of New Mexico, California, Tennessee, Mississippi, and Idaho to the five superdreadnaughts now under construction completely exhausts the list of unused names. In selecting names for the five battle cruisers authorized by the last congress recourse was had to names which never should have disappeared from the navy register-Constitution, Constellation, Saratoga, Ranger, and Lexington. The famous old frigates Constitution and Constellation, now preserved as relics of the wooden fleets of a century ago, will be known as "Old Constitution" and "Old Constellation." The present Saratoga was formerly the New York, the armored cruiser which served as Admiral Sampson's flag ship,

EVERY MAN TO HIS LAST.

Because you are an excellent carpenter, declared Socrates in his famous Apologia at Athens, it does not therefore follow that you are the wisest of men. Yet the tendency persisted and persists, and Alexander Cruden, a great maker of concordances, was found offering his services to the British government, over 150 years ago, as "corrector of morals," just as many rich business men in England today are offering their services to the government "under the conviction that they can do in one day what an expert can barely manage in three,-Christian Science Monitor.

IN MONTENEGRO.

There's a peculiar superstition in Montenegro where the pensants believe that the Iron kettle chain over the hot fireplace will not heat at all on Christmas night, as at all other times, but remains cool to the touch. To explain this they claim that a similar chain hung over the fire built on the floor of the stable at Bethlehem, and that at the birth of Christ, the virgin mother grasped it for support. It became cool at her touch lest it burn the saintly hand.

"Picton Day" Now. The horrors of war are making them selves felt in Minneapolis, Minn. Res taurant keepers in that town have in-

augurated a pieless day, in order to save wheat, sugar and lard. If this experiment proves successful a doughnutless day will be inaugurated.

Examine carefully every bottle of CASTORIA, that famous old remedy for infants and children, and see that it Bears the Cart thithe In Use for Over 30 Year Children Cry for Fletcher's Castoria

Self-Interest is the principal ingredient in the interesting things of life

A FIGHT FOR LIFE

It has been fight or die for many of us in the past and the lucky people are those who have suffered, but who are now well because they heeded nature's warning signal in time to correct their trouble with that wonderful new discovery of Dr. Pierce's called "An-uric." You should promptly heed these warnings, some of which are dizzy spells, backache, irregularity of the urine or the painful twinges of rheumatism, sciatica or lumbago. To delay may make possible the dangerous forms of kidney disease, such as stone in the bladder.

To overcome these distressing condi-

To overcome these distressing condi-tions take plenty of exercise in the open air, avoid a heavy meat diet, drink freely of water and at each meal take Dr. Pierce's Anuric Tablets (double strength). You will, in a short time, find that you are one of the firm indorsers of Anuric, as are thousands of neighbors.

Step into the drug store and ask for a 60c bottle of Anuric, or send Dr. V. M. Pierce, Buffalo, N. Y., 10c for trial pkg. Anuric, many times more potent than lithla, eliminates uric acid as hot water melts sugar.

Eat Fruit to Save Flour.

The people of the United States have bananas, apples and a dozen perishable foods that are denied our soldiers and the soldiers of our allies in France. If one person will do without a biscuit a day by eating the equivalent in fruit or perishable vegetables. in one year the wheat in 365 biscuits will have been saved for shipment to Europe. And the fruit and vegetable eater will be happier and healthier for the practice. Surely that is worth the doing. Instructions from the government tell exactly what is to be conserved. When those instructions are not observed the consumer is helping Germany to his best ability.-Houston

COVETED BY ALL

but possessed by few—a beautiful head of hair. If yours is streaked with gray, or is harsh and stiff, you can restore it to its former beauty and luster by using "La Creole" Hair Dress-ing. Price \$1.00.—Adv.

Object to Sunday Work.

Abolishing Sundays resulted in rioting in Augsberg, Bavaria, and as a result a compromise is now being tried. Sunday work henceforth including rest hours, will only cover six hours. Youthful workers of both sexes will be permitted to go to church. The Bavarian munition manufacturers also agree to limit work to 541/2 hours a week for which 561/2 hours pay will be given. It is promised that Sunday work shall cease by March, 1918.

Catarrhal Deafness Cannot Be Cured by local applications as they cannot reach the diseased portion of the ear. There is only one way to cure Catarrhal Deafness, only one way to cure Catarrhal Deafness, and that is by a constitutional remedy. HALL'S CATARRH MEDICINE acts through the Blood on the Mucous Surfaces of the System. Catarrhal Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube is inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed, Deafness is the result. Unless the inflammation can be reduced and this tube restored to its normal condition, hearing may be destroyed forever. Many cases of Deafness are caused by Catarrh, which is an inflamed condition of the Mucous Surfaces.

ONE HUNDRED DOLLARS for any case of Catarrhal Deafness that cannot be cured by HALL'S CATARRH MEDICINE.

All Druggists 75c. Circulars free.

All Druggists 75c. Circulars free. F. J. Cheney & Co., Toledo, Ohio

Not Fond of Army Life. Army life did not agree with Ginger, a Boston bull. After a three-weeks' career as mascot in the Canadian

army, he has returned to his old haunts, and is happy again. The dog is owned by John Hamilton, a Los Angeles resident of fifteen years' standing, who recently enlisted in the Canadian forces. He took Ginger along, but the dog did not take to the army life. In fact, he was wasting away, until Hamilton decided to send him back to Los Angeles. On his arrival he ate six meals in three hours and now has a joyous bark for all his old friends.

Tea Leaves in War.

Instructions have been sent to all English army and navy canteens to save all used ten leaves, which are to be corefully kept in muslin bags and forwarded to central depots. The old leaves are not to be used again in making beverages, but are needed in connection with munition making.

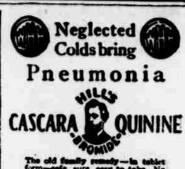
Keeping the Quality Up
LAXATIVE BROMO QUININE, the World-Famona
Curs for Colds and Grip, is now Me per bux. Or
secount of the ortance in the price of the sig offferent Medicinal, Concentrated Entracts and Coomicals contained in LAXATIVE BROWN QUININE,
it was necessary to increase the price to the Broggiat. It has stood the test for a Oparier of a Conlary. It is used by every Civilized Nation.

His Game. "Hew did he make his fortune?" "Fromoting bazaars for worthy char-

THIS IS THE AGE OF YOUTH. You will look ten years younger if you darken your ugly, grizzly, gray hairs by using "La Creole" Hair Dressing.—Adv.

There is no ring to a latitude-it is

then Your Eves Need Care Try Murida Eve Respect





TO BUILD UP AFTER GRIP, COLDSI

Quincy, Ill.—"About five years ago this spring I had a very bad attack of the Grip. I doctored to rid myself of it, but it seemed as though it would hang on forever. I had read of Dr. Pierce's Golden Medical Discovery and decided to give it a trail. It helped me hight from the start, and four botties made a new man out of me. Re-cently I became ill with another attack of Grip and I took the Discovery with the same good results."-G. C. WIL-LIAMS, 503 N. 11th St.

Dr. Pierce's Golden Medical Discorery, the herbal remedy, has made a fine reputation for 50 years. It contains no alcohol or narcotics. The ingredients are printed on the package. Send 10 cents to Dr. V. M. Pierce, Invalids Hotel, Buffalo, N. Y., and he will send you a trial package of the tablets.—Adv.

Why Bald So Young Rub Dandruff and Itching with Cuticura Ointment

Shampoo with Cuticura Soap Sald everywhere Soap 2540 introcent 25450 SHIP YOUR CATTLE. HOGS and SHEEP to CARR SMITH & SONS

Live Stock Commission Agents National Stock Yards, IIL

Write, wire or phone for special inf TYPHOID than 5 mail po X., Amy than 5 mail po X., Amy the amost miraculous efficacy, and harmlessness, of Antityphoid Vaccination. He vaccinated NOW by your physician, you and your family. It is more with than house insujance. Aik your physician, druggist, or send for 'Hare you had Typhoid' telling of Typhoid Vaccinas, sulfation use, and danger from Typhoid Carriers. Producing Vaccines and Serums under U. S. Licesse The Gutter Laboratory, Barkeley, Cal., Chicage, Ill.

No Typhoid in French Army. Prof. H. Vincent of the French army

medical corps informs the Academie de Medicine that as a result of vaccinas tion against typhold and para-typhold the number of cases had fallen this year to an average of 0.054 per thousand. The mortality is now only about three in a million. Compared with conditions before the war, when the vaccination was by no means universal, the cases are seven times less numerous and the deaths 8.5 times less numers ous now.

RECIPE FOR GRAY HAIR.

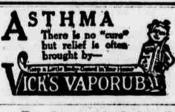
To half pint of water add 1 oz. Bay Rum, a small box of Barbo Compound, 4 oz. of glycerine. Any druggist car put this up or you can mix it at home at very little cost. Full directions for making and use come in each box of Barbo Compound. It will gradually darken streaked, faded gray hair, and make it soft and glossy. It will not color the scalp, is not sticky or greasy, and does not rub off. Adv.

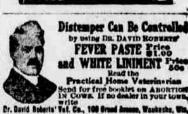
Natural Presumption.

"What do you want to know, son?" "Are barks the kind of vessels ther have dog watches on?"

All the money you intended to save doesn't draw Interest.

Consistency is often but another name for contrariness





Mother Gray's Powders Benefit Many Children



Thousands of Mothers have found NOTHER GRAY'S SWEET POW-BERS an excellent rem-edy for children com-plaining of Headaches, Colds, Constipation, Foverishness, Stomache Troubles and Bowel he-rogularities from which-children unfer at this

children war-season. These powders seast to take and excel-seast to take and excel-seast to take and excel-seast to take and excelare easy and pleasant to take the control of their coults are accomplished by their use. Used by Mothers for 52 spars. Sold by Druggists everywhere, 25 control of their country of their country of their control of their control of their country Trial package FREE Address, THE MOTHER GRAY CO., Le Rey, M. Y.

